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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/030,530	04/15/2002	Wolfram Angerer	P/3013-13	4126
2352	7590	10/17/2005	EXAMINER	
OSTROLENK FABER GERB & SOFFEN 1180 AVENUE OF THE AMERICAS NEW YORK, NY 100368403			VANAMAN, FRANK BENNETT	
			ART UNIT	PAPER NUMBER
			3618	

DATE MAILED: 10/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/030,530	ANGERER ET AL.	
	Examiner	Art Unit	
	Frank Vanaman	3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Status of Application

1. Applicant's amendment, filed Aug. 1, 2005 has been entered in the application. Claims 16-31 are pending, with claim 31 having been added.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 16-18, 20-28 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright (US 6,181,033, filed 12/1999) in view of Raby (US 3,925,695) and Myers (US 4,330,045, cited previously). Wright teaches an electric drive for a shaft, comprising an electric machine (12, 18) including a stator (14) a rotor (20) to which is connected a drive shaft (26) with an end (right of 26, figure 1) which is connected to the rotor, extending through the electric machine, the rotor, stator and shaft all being coaxial, the motor including a power control unit (mounted to PC board 40) arranged at an end surface of the machine, which controls at least one of speed and torque of the motor (col. 3, lines 8-24 and lines 34-47) forming a combination with the motor through mechanical (40, 56, force-fit snap tab 60) and electrical (88) connections. The reference to Wright fails to teach the provision of a braking resistor assembly including plural resistors having a modular construction which allows them to be arrayed along the shaft axis, circumferentially outwardly of the shaft, and having an annular shape which encloses the drive shaft.

Raby teaches an electric drive for a shaft, including a stator (16, 18) a rotor (38, 40) to which is connected a drive shaft (34, 36, 54) which is connected to the rotor, extending through the electric machine, the rotor, stator and shaft all being coaxial, the motor including a resistor unit comprising plural resistors (62, 80, 82, 84, 136, 138, 140, etc.), which are rotationally fixed to the rotor shaft, and which may be engaged during a braking procedure in that it is connected both electrically and mechanically in the motor (see figure 4), the resistors having a modular construction which allows them to be arrayed along the shaft axis (see figure 2), circumferentially outwardly of the shaft, and having an annular shape (figure 3), which encloses the drive shaft. It would have been

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obvious to one of ordinary skill in the art at the time of the invention to provide the electric machine taught by Wright with the modular resistor assembly taught by Raby for the purpose of providing a compact resistor arrangement usable with the motor, thus reducing the space required to accommodate both the electric machine and resistors. The reference to Wright as modified by Raby fails to teach an end to the shaft which is connectable to a transmission, and thence to a wheel shaft. Myers teaches a motor drive arrangement wherein a motor output shaft (at 34) is connected through a transmission device (e.g., 30, 40, 41, etc.) to drive a wheel shaft (e.g., 45). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the motor taught by Wright and modified by Raby with a transmission connected to a wheel shaft as taught by Myers, for the purpose of allowing the motor to rotate a wheel, so as to allow propulsion to occur.

As regards claim 27, while the electric machine taught by Wright and modified by Raby and Myers is not explicitly referred to as a transverse flux machine, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ a transverse flux machine structure in the arrangement taught by Wright as modified by Raby and Myers for the purpose of advantageously employing a transverse flux structure to improve operation.

As regards claim 28, while the reference to Wright as modified by Raby and Myers fails to explicitly teach a power supply system, the motor would be inoperative without such a system, and as such, the provision of a power supply system would be deemed to be well within the skill of the ordinary practitioner for the purposes of allowing the machine to function.

4. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wright in view of Raby, Myers and Kinoshita et al. (US 5,517,401). The reference to Wright as modified by Raby and Myers is discussed above and fails to teach the controller element connected to the machine, with the controller arranged at an end surface of the machine, on the circumference. Kinoshita et al. teach an electric machine (3) with a controller unit (101) connected electrically and mechanically to the electric machine,

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arranged proximate an end surface of the machine wherein the circumference of the controller is located on the circumference of the electric machine (see figures 19-22; and col. 9, line 52 through col. 10, line 64). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the electrical machine of Wright as modified by Raby and Myers with a controller circuit for operating the motor, wherein the circuit is located proximate an end surface of the machine at its circumference as taught by Kinoshita et al., for the purpose of mounting the circuit close to the machine to reduce line losses and electrical faults, but retain access for maintenance purposes.

5. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wright in view of Raby, Myers and Lyons (US 5,950,752). The references of Wright, Raby and Myers are discussed above and fail to teach the specific provision of a power supply for the machine, including a fuel cell. Lyons teaches a vehicle drive scheme including both an internal combustion engine (18) and a fuel cell (24) for providing power (through 14) to an electric machine (40) via an electrical coupling (28m). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a vehicle power source including a fuel cell and internal combustion engine as taught by Lyons to operate the motor taught by Wright as modified by Raby and Myers for the purpose of providing a dual source supply of energy (i.e., the engine and fuel cell) for the purpose of allowing a vehicle to be operated from a fuel cell when it is not feasible to operate it from the internal combustion engine.

6. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wright in view of Raby, Myers and Lateur et al. (US 5,823,280). The references of Wright, Raby and Myers are discussed above and fail to teach the electric machine as being used in a vehicle power system including a power supply for the machine, and internal combustion engine being physically coupled to the electric machine, wherein the machine can operate as a generator. Lateur et al. teach a parallel hybrid vehicle having an internal combustion engine (22) which is connected to drive a vehicle (through 62,

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20), the engine being physically connected to an electric machine (motor/generator 12) through a coupling (82, 83, see figure 3), so as to allow either or both electric machine and engine to drive the vehicle, the electric machine being operable as a generator and connected to a power supply (24) through a controller (16). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the electric machine of Wright as modified by Raby and Myers in a power system including a direct coupled internal combustion engine and power supply as taught by Lat ur et al., with the machine having a common structure operable as both a motor and generator, for the purpose of providing the compact electric machine in a hybrid vehicle in order to conserve space, by the provision of a more compact motor/controller structure.

Response to Comments

7. Applicant's comments, filed with the amendment, have been carefully considered. As regards the lacking of the prior art in teaching the specifics of the transmission device, the examiner agrees that such is the case, and apologizes for the failure to specifically point out in the prior art the provision of a transmission device as claimed. Note the reference to Myers, cited previously and now applied. Applicant's comments concerning the braking resistor are noted, however applicant is reminded that the use of a rotor resistance increases torque, and as such, an increased torque delivered by the motor can allow a greater braking force to be developed -- and the resistors taught by Raby may be used when a motor is in a braking mode to the breadth such a function is currently set forth in the claims. As regards the resistors not being arranged axially, the examiner disagrees, and notes that Raby at figure 2 clearly shows an axial arrangement. As regards applicant's comments concerning 'rotationally fixed', the examiner notes that the resistors are rotationally fixed to the shaft, which interpretation is not improper given the breadth of applicant's current recitation as set forth in claim 31.

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Conclusion

1. Any inquiry specifically concerning this communication or earlier communications from the examiner should be directed to F. Vanaman whose telephone number is 571-272-6701.

Any inquiries of a general nature or relating to the status of this application may be made through either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A response to this action should be mailed to:

Mail Stop _____
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450,

Or faxed to:

PTO Central Fax: 571-273-8300

F. VANAMAN
Primary Examiner
Art Unit 3618

